



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,499	01/23/2004	Thomas Wolfgang Nehl	DP-308152	7213

7590 06/30/2005
DELPHI TECHNOLOGIES, INC.
Legal Staff
Mail Code: 480-410-202
P.O. Box 5052
Troy, MI 48007-5052

EXAMINER

JENKINS, JERMAINE L

ART UNIT PAPER NUMBER

2855

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/763,499	Applicant(s) NEHL ET AL.	
	Examiner Jermaine Jenkins	Art Unit 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-48 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>05172004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-15, 17-34 & 36-48 are rejected under 35 U.S.C. 102(b) as being anticipated by Fish (5,146,790).

In regards to claims 1, 7, 8, 17, 19, 25, 43, 44, 46 & 47, Fish teaches a torque detector having a sensor mechanism position adjacent the shaft (24) to detect a magnetic flux (Column 3, lines 31-46), and a magnetic source (50, i.e. permanent magnet) having two magnetized poles disposed with the shaft (24) for producing an essentially sinusoidal magnetic field distribution in both a radial and a circumferential direction around the shaft (24) (Column 3, lines 40-46), a flux collector (34, i.e. sensing coil) having a first half and a second half defining a gap therebetween and extending beyond the first and second edges of the magnetostrictive material (Column 3, lines 37-40), a sensor disposed within the gap for measuring an axial component of the magnetic flux flowing from the edges of the magnetostrictive material (Column 3, lines 37-40), a positional ring (28, i.e. drive coil) extending annularly around and spaced from the shaft (24) (Column 4, lines 46-47), a positional sensor (45, i.e. detector means) disposed between the positional ring (28) and the shaft (24) for measuring a radial component of the magnetic flux

Art Unit: 2855

(Column 4, lines 63-68), and a magnetic source (50) disposed with the shaft for producing magnetic flux about the shaft (24) (Column 3, lines 31-46).

With respect to claim 2, 3, 26 & 27, Fish teaches the magnetic source being further defined as a permanent magnet (50) (Column 3, lines 40-46).

With respect to claims 4 & 5, Fish teaches the sensor mechanism including a magnetostrictive material disposed annularly about the shaft (24) and extending between the first and second edges and being applied directly to the shaft (24) (Column 4, lines 7-9).

With respect to claim 6, Fish teaches the sensor mechanism including a flux collector (34, i.e. coil) extending beyond the first and second edges of the magnetostrictive material (Column 5, lines 10-18; See Figure 1).

With respect to claims 9 & 28, Fish teaches the flux collector (34) defined as being attached to the shaft (24) (Column 4, lines 51-53).

With respect to claims 10, 12, 14, 22, 29, 31, 33, 37 & 39, Fish teaches a pair of the flux collectors (34 & 34') (Column 4, lines 63-64; Figure 2).

With respect to claims 11, 13, 15, 21, 23, 30, 32, 34, 38 & 40, Fish teaches the flux collectors (34 & 34') being spaced 90 degrees and 180 degrees from one another (See Figure 1).

With respect to claims 17, 18 & 36, Fish teaches the sensor mechanism includes a positional ring (28, i.e. drive coil) extending annularly around and spaced from the shaft (24) (Column 4, lines 46-47).

With respect to claims 19, 42, 45 & 48, Fish teaches the sensor mechanism includes a positional sensor (45) disposed between the positional ring (28) and the shaft (24) for measuring

Art Unit: 2855

a radial component of the magnetic flux produced by the magnetic source (50) (Column 4, lines 63-68).

With respect to claims 24 & 41, Fish teaches the shaft (24) being rotatable within the positional ring (28) (Column 4, lines 46-47; See Figure 1).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 16 & 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fish (5,146,790) in view of Lugosi et al (5,157,966).

With respect to claims 16 & 35, Fish teaches the claimed invention except for the sensor being further defined as a Hall effect sensor. Lugosi et al teaches a speed sensor comprising a Hall effect sensor to detect the magnetic field (Column 3, lines 9-15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a Hall effect sensor as taught by Lugosi et al in the sensing apparatus of Fish for the purpose of its well-known reliability and being easy to manufacture.

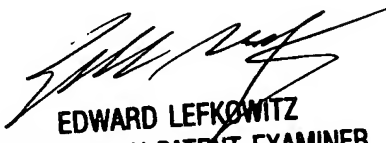
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermaine Jenkins whose telephone number is 571-272-2179. The examiner can normally be reached on Monday-Friday 8am-430pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jermaine Jenkins
A.U. 2855



EDWARD LEFKOWITZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800